

## **REMARKS**

This Response is submitted in answer to the Office Action dated January 9, 2008, having a shortened three month period set to expire April 9, 2008.

### **I. CLAIM REJECTIONS UNDER 35 U.S.C. § 102**

On page 3 of the present Office Action, Claims 1, 2, 4-9, 11-16, 18 and 19 are rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 7,133,654 to *Carballo et al.* (*Carballo*). That rejection is respectfully traversed, and favorable reconsideration of the claims is requested.

#### **A. *Carballo* does not disclose the “debug unit” recited in exemplary Claim 1**

*Carballo* does not render exemplary Claim 1 unpatentable under 35 U.S.C. § 102(e) because that reference does not identically disclose the debug unit recited in Claim 1 as follows:

a debug unit configured to determine a bit error rate (BER) of the test data signal and further configured to determine at least one jitter characteristic of the communication link.

In paragraph 4 of the present Office Action, transceiver 20 depicted in Figure 2 of *Carballo* is relied upon as disclosing the claimed “debug unit.”

Applicant respectfully traverses the Examiner’s position because *Carballo*’s transceiver 20 does not identically disclose the “debug unit” recited in exemplary Claim 1 as required to support a rejection under 35 U.S.C. § 102. *Carballo*’s transceiver 20, while measuring jitter with link quality measurement block 22 (see, e.g., *Carballo*, col. 6, lines 49-58), does not “determine a bit error rate (BER),” as claimed. The Examiner attempts to demonstrate this feature in Figure 7 of *Carballo*, which is “a graph depicting the relationship of corrected high frequency jitter count values in the measurement of the present invention versus receiver jitter margin for a predetermined BER” (col. 7, lines 34-45). In other words, the graph depicted in Figure 7 discloses the relationship between jitter margin and corrected high frequency jitter for a given BER, but does not disclose the measurement

of BER. Thus, *Carballo* does not disclose that transceiver 20 of Figure 2 determines the BER and further does not disclose any element within transceiver 20 whose function is to determine the BER.

Because *Carballo* does not disclose the “debug unit” recited in exemplary Claim 1, the rejection of Claim 1 under 35 U.S.C. § 102 should be withdrawn. In addition, the foregoing remarks overcome the rejections of independent Claims 11 and 18, which similarly recite “a debug unit.” The foregoing remarks also overcome the rejection of dependent Claims 2-10, 12-17 and 19-20, which depend from Claims 1, 11 and 18, respectively, and accordingly include the features of their respective underlying independent claims.

**B. *Carballo* does not disclose the “test advisor” recited in exemplary Claim 1**

Exemplary Claim 1 is also not rendered unpatentable by *Carballo* because that reference does not identically disclose the “test advisor” recited in Claim 1 as follows:

... the debug unit further includes a test advisor configured to output a recommendation regarding a communication problem, based on the BER and the at least one jitter characteristic.

In paragraph 3 of the present Office Action the Examiner again relies upon transceiver 20 depicted in *Carballo*’s Figure 2 as teaching the claimed “test advisor.”

Applicant respectfully traverses the Examiner’s position because *Carballo*’s transceiver 20 does not identically disclose the “test advisor” recited in exemplary Claim 1 as required to support a rejection under 35 U.S.C. § 102. Specifically, *Carballo* does not identically disclose that transceiver 20 “output[s] a recommendation regarding a communication problem, based on the BER and the at least one jitter characteristic,” as recited in exemplary Claim 1. To address the deficiency of *Carballo*, the Examiner points out that *Carballo*’s Abstract discloses a “corrected output.” However, the corrected output referenced in the Abstract is a corrected high frequency jitter measurement, which Figure 3 of *Carballo* and col. 6, line 1 *et seq.* of *Carballo* disclose is obtained by removing the contribution of low-frequency jitter to the high-frequency jitter measurement (see, e.g., col. 6, lines 20-25). As should be apparent, *Carballo*’s transceiver thus includes a link quality measurement

block 22 that outputs a corrected jitter signal based solely upon the low-frequency and high-frequency jitter, and not based on the BER determined by the debug unit as claimed.

Because *Carballo* does not disclose “a test advisor configured to output a recommendation regarding a communication problem, based on the BER and the at least one jitter characteristic”, Applicant respectfully submits that the rejection of Claim 1 under 35 U.S.C. § 102 should be withdrawn. In addition, the foregoing remarks overcome the rejections of independent Claims 11 and 18, which respectively recite “a test advisor configured to recommend ... corrective action responsive to the BER exceeding a predetermined threshold” and “means for using the BER and the at least one jitter characteristic to generate an action recommendation if the BER exceeds a specified threshold.” The foregoing remarks also overcome the rejection of dependent Claims 2-10, 12-17 and 19-20, which depend from Claims 1, 11 and 18, respectively, and accordingly include the features of their respective underlying independent claims.

Applicant further notes that *Carballo* is unavailable as a reference under 35 U.S.C. § 103 in view of its common ownership at the time of the present invention with the present application.

## **II. CLAIM REJECTIONS UNDER 35 U.S.C. § 103**

In paragraph 4 of the present Office Action, Claims 1, 2, 4-6, 11-13 and 18 are rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Publication No. 2003/0202573 to *Yamaguchi et al.* (*Yamaguchi*) in view of U.S. Patent Publication No. 2004/0205431 to *Moore et al.* (*Moore*). On page 6 of the present Office Action, Claims 3, 7-9, 14-16 and 19 are rejected under 35 U.S.C. § 103(a) as unpatentable over *Yamaguchi* in view of *Moore* and in further view of U.S. Patent Publication No. 2002/0146084 to *Cranford, Jr. et al.* (*Cranford*). Also, on page 9 of the present Office Action, Claims 10 and 17 are rejected under 35 U.S.C. § 103(a) as unpatentable over *Yamaguchi* in view of *Moore* further in view of U.S. Patent Publication No. 2003/0072388 to *Francos et al.* (*Francos*). Finally, on page 9 of the present Office Action, Claim 20 is rejected under 35 U.S.C. § 103(a) as unpatentable over *Yamaguchi* in view of *Moore* further in view of *Cranford*. These rejections are also respectfully traversed.

**A. Combination of *Yamaguchi* and *Moore* does not disclose the “test advisor” recited in exemplary Claim 1**

The combination of *Yamaguchi* and *Moore* does not render exemplary Claim 1 unpatentable under 35 U.S.C. § 103 because that reference does not disclose a debug unit including a test advisor as recited in Claim 1 as follows:

... the debug unit further includes a test advisor configured to output a recommendation regarding a communication problem, based on the BER and the at least one jitter characteristic.

In paragraph 4 of the present Office Action, *Yamaguchi* is relied upon as disclosing determining a bit error rate (BER) and at least one jitter characteristic. The Examiner correctly notes that *Yamaguchi* does not disclose use of these measurements. Paragraphs [0037] and [0038] of *Moore* is additionally cited as teaching the claimed “test advisor” based upon the Examiner’s belief that “changes are made in the device according to the BER and jitter characteristics.” The Examiner asserts in paragraph 4 that “[b]y combining the apparatus of Moore into the communication link of Yamaguchi, the receiver can be properly calibrated allowing data to be received with fewer errors.”

Applicant respectfully traverses the Examiner’s position because the combination of *Yamaguchi* and *Moore* does not disclose the “test advisor” recited in exemplary Claim 1, and specifically, does not disclose a device that “output[s] a recommendation regarding a communication problem, based on the BER and the at least one jitter characteristic,” as recited in exemplary Claim 1. Instead, *Moore* teaches that the test pattern is changed “if the test pattern received at the DUT matches the test pattern generated by the test pattern generator,” that is, if the BER is zero (*Moore*, paragraph [0037]). (No change to the test pattern is made if the BER is non-zero.) Thus, *Moore* teaches that the test pattern is changed based solely on the BER and not based upon both the BER and at least one jitter characteristic, as claimed. Consequently, if *Moore* were combined with *Yamaguchi* as suggested by the Examiner, that combination would not disclose a debug unit including a test advisor configured to output a recommendation regarding a communication problem based on the BER and at least one jitter characteristic, as recited in exemplary Claim 1.

Because the combination of *Yamaguchi* and *Moore* does not disclose “a test advisor configured to output a recommendation regarding a communication problem, based on the BER and the at least one jitter characteristic”, Applicant respectfully submits that the rejection of Claim 1 and its dependent claims under 35 U.S.C. § 103 should be withdrawn.

**B. Combination of *Yamaguchi* and *Moore* does not disclose “test advisor” of exemplary Claim 11**

The combination of *Yamaguchi* and *Moore* does not render exemplary Claim 11 unpatentable under 35 U.S.C. § 103 because that reference does not disclose a debug unit including a test advisor as recited in Claim 11 as follows:

a test advisor configured to recommend, based on the BER and the at least one jitter characteristic, corrective action responsive to the BER exceeding a predetermined threshold.

Despite the differences in claim language between Claim 11 and Claim 1, Claim 11 is rejected in paragraph 4 of the present Office Action on the same basis as Claim 1.

Applicant respectfully traverses the rejection of Claim 11 because the combination of *Yamaguchi* and *Moore* does not disclose a test advisor configured to recommend corrective action “based on the BER and the at least one jitter characteristic,” as recited in exemplary Claim 11. As argued above with reference to exemplary Claim 1, the combination of *Yamaguchi* and *Moore* does not disclose use of both the BER and the at least one jitter characteristic to recommend corrective action because *Moore*, which is principally relied upon by the Examiner as disclosing the claimed “test advisor,” discloses changing a test pattern based solely on the BER. Thus, the combination of *Yamaguchi* and *Moore* does not disclose a test advisor configured to recommend corrective action “based on the BER and the at least one jitter characteristic” as claimed.

The combination of *Yamaguchi* and *Moore* also does not disclose a test advisor configured to recommend corrective action “responsive to the BER exceeding a predetermined threshold” as claimed. As noted above, *Moore* discloses in paragraphs [0037] and [0038] that a test pattern is changed “if the test pattern received at the DUT matches the test pattern generated by the test pattern

generator,” that is, if the BER is zero, and that testing ends if the BER is non-zero (*Moore*, paragraph [0037]). Thus, *Moore* teaches a system that uses a BER threshold of zero and that ends testing if the BER exceeds the zero BER threshold. This disclosure teaches directly against the invention recited in Claim 11, in which “a test advisor [is] configured to recommend ... corrective action responsive to the BER exceeding a predetermined threshold.”

Because the combination of *Yamaguchi* and *Moore* does not disclose and further teaches directly against the claimed “a test advisor,” Applicant respectfully submits that the rejection of Claim 11 and its dependent claims under 35 U.S.C. § 103 should be withdrawn.

**C. Combination of *Yamaguchi* and *Moore* does not disclose “means for using the BER and the at least one jitter characteristic to generate an action recommendation” as recited in exemplary Claim 18**

The combination of *Yamaguchi* and *Moore* does not render exemplary Claim 18 unpatentable under 35 U.S.C. § 103 because that reference does not disclose the following feature of exemplary Claim 18:

means for using the BER and the at least one jitter characteristic to generate an action recommendation if the BER exceeds a specified threshold.

As with Claim 11, the rejection set forth against Claim 1 in paragraph 4 of the present Office Action is also utilized as the basis for rejecting Claim 18.

Applicant respectfully traverses the rejection of Claim 18 because the combination of *Yamaguchi* and *Moore* does not disclose “means for using the BER and the at least one jitter characteristic to generate an action recommendation if the BER exceeds a specified threshold,” as recited in exemplary Claim 18. As argued above with reference to Claims 1 and 11, the combination of *Yamaguchi* and *Moore* does not disclose “means for using the BER and the at least one jitter characteristic to generate an action recommendation” because *Moore*, which is principally relied upon by the Examiner as disclosing the claimed “means,” discloses changing a test pattern based

solely on the BER. Thus, the combination of *Yamaguchi* and *Moore* does not disclose “using the BER and the at least one jitter characteristic to generate an action recommendation” as claimed.

The combination of *Yamaguchi* and *Moore* also does not disclose the claimed “means for using the BER and the at least one jitter characteristic to generate an action recommendation if the BER exceeds a specified threshold” because *Moore* teaches against generating an action recommendation “if the BER exceeds a specified threshold.” That is, as argued above with reference to Claim 11, *Moore* teaches a system that uses a BER threshold of zero and that ends testing if the BER exceeds the zero BER threshold. This disclosure teaches directly against the invention recited in Claim 18, in which an action recommendation is generated “if the BER exceeds a specified threshold.”

Because the combination of *Yamaguchi* and *Moore* does not disclose and further teaches directly against the claimed “means for using the BER and the at least one jitter characteristic to generate an action recommendation if the BER exceeds a specified threshold,” Applicant respectfully submits that the rejection of Claim 18 and its dependent claims under 35 U.S.C. § 103 should be withdrawn.

### **III. CONCLUSION**

Having now addressed and overcome each outstanding rejection of the claims, Applicant respectfully submits that all claims now pending are in condition for allowance and respectfully requests such allowance.

Please charge any fee necessary to further the prosecution of this application to **IBM Corporation Deposit Account No. 09-0447**.

Respectfully submitted,



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